CLAIMS:

1. Receiver for receiving modulated coded signals and comprising a phase-shift-keying demodulator for demodulating said signals and comprising a differential detector for decoding said signals, characterized in that said differential detector comprises a non-linear compensator coupled to a decoder for compensating a decoder output signal.

2. Receiver according to claim 1, characterized in that said non-linear compensator comprises a channel estimator for estimating at least one coefficient of at least one term of said decoder output signal and a remover for removing at least one term of said decoder output signal.

3. Receiver according to claim 2, characterized in that said receiver is designed for a Bluetooth environment.

4. Receiver according to claim 3, characterized in that said decoder output signal is defined as $u_k = Ab_k + Bb_{k-1} + Cb_{k+1} + Db_k^* + Eb_{k-1}b_k + Fb_kb_{k+1} + Gb_{k-1}b_kb_{k+1} + H$, with said remover removing the H-term.

5. Receiver according to claim 4, characterized in that said remover comprises a combiner for receiving an H-coefficient from said channel estimator for combining said decoder output signal with said H-term such that said H-term is removed.

6. Receiver according to claim 3, characterized in that said decoder output signal is defined as $u_k = Ab_k + Bb_{k-1} + Cb_{k+1} + Db_k^* + Eb_{k-1}b_k + Fb_kb_{k+1} + Gb_{k-1}b_kb_{k+1} + H$, with said remover removing the Bb_{k-1}-term.

7. Receiver according to claim 6, characterized in that said remover comprises a combiner for receiving a product of a B-coefficient originating from said channel estimator and a b_{k-1}-signal originating from an output of said non-linear compensator and delayed by T_s

for combining said decoder output signal with said Bb_{k-1}-term such that said Bb_{k-1}-term is removed.

8. Receiver according to claim 7, characterized in that said remover comprises a slicer located between said combiner and said output of said non-linear compensator for slicing the compensated decoder output signal.

9. Non-linear compensator for use in a receiver for receiving modulated coded signals and comprising a phase-shift-keying demodulator for demodulating said signals and comprising a differential detector for decoding said signals, characterized in that said differential detector comprises said non-linear compensator coupled to a decoder for compensating a decoder output signal.

10. Transceiver comprising a transmitter with a differential coder and a phase-shift-keying modulator for transmitting modulated coded signals and comprising a receiver for receiving said modulated coded signals with a phase-shift-keying demodulator for demodulating said signals and a differential detector for decoding said signals, characterized in that said differential detector comprises a non-linear compensator coupled to a decoder for compensating a decoder output signal.

11. Method for receiving modulated coded signals and comprising the steps of demodulating said signals via phase-shift-keying demodulation and of decoding said signals, characterized in that said step of decoding comprises the substep of non-linearly compensating decoded signals.

12. Processor program product for receiving modulated coded signals and comprising the functions of demodulating said signals via phase-shift-keying demodulation and of decoding said signals, characterized in that said function of decoding comprises the subfunction of non-linearly compensating decoded signals.